

and a transmigration into heaven, even whilst we remain here upon earth in the flesh, and a descending or penetrating into the center and innermost recesses of the earth, and all earthly bodies; nay, it would open not only a cranny, but a large window (as I may so speak) into the Shop of Nature, whereby we might be enabled to see both the tools and operators, and the very manner of the operation it self of Nature; this, could it be effected, would as far surpass all other kind of perspectives as the vast extent of Heaven does the small point of the Earth, which distance it would immediately remove, and unite them, as 'twere, into one, at least, that there should appear no more distance between them then the length of the Tube, into the ends of which these Glasses should be inserted: Now, whether this may not be effected with parcels of Glass of several densities, I have sometimes proceeded so far as to doubt (though in truth, as to the general, I have wholly despair'd of it) for I have often observ'd in Optical Glasses a very great variety of the parts, which are commonly called Veins; nay, some of them round enough (for they are for the most part, drawn out into strings) to constitute a kind of *lens*.

This I should further proceed to open, had any one been so inquisitive as to have found out the way of making any transparent body, either more dense or more rare; for then it might be possible to compose a Globule that should be more dense in the middle of it, then in any other part, and to compose the whole bulk, so as that there should be a continual gradual transition from one degree of density to another; such as should be found requisite for the desired inflection of the *transmigrating* Rays; but of this enough at present, because I may say more of it when I set down my own Trials concerning the melioration of *Dioptricks*, where I shall enumerate with how many several substances I have made both *Microscopes*, and *Telescopes*, and by what and how many, ways: Let such as have leisure and opportunity farther consider it.

The next Quarry shall be, whether by the same collection of a more dense body then the other, or at least, of the denser part of the other, there might not be imagin'd a reason of the apparition of some new fix'd Stars, as those in the Swan, *Cassiope's Charr*, *Serpentarius*, *Piscis*, *Cetus*, &c.

Thirdly, Whether it be possible to define the height of the *Atmosphere* from this inflection of the Rays, or from the Quicksilver Experiment of the rarification or extension of the Air.

Fourthly, Whether the disparity between the upper and under Air be not sometimes so great, as to make a reflecting superficies; I have had several Observations which seem to have proceeded from some such cause, but it would be too long to relate and examine them. An Experiment, also somewhat analogous to this, I have made with Salt-water and Fresh, which two liquors, in most Positions, seem'd the same, and not to be separated by any determinate superficies, which separating surface yet in some other Positions did plainly appear.

And if so, Whether the reason of the equal bounding or *terminus* of the under parts of the clouds may not proceed from this cause; whether, secondly,

secondly, the Reason of the apparition of many Suns out, by considering how the Rays of the Sun may so describe a pretty true Image of the body, as we find the lar Superficies. Whether also this may not be found rition of some of those *Parelii*, or counterfeit Suns, whered, by refracting the Rays so, as to make the body of quite another place then really it is. But of this more

5. Whether the *Phænomena* of the Clouds may not this diversity of density in the upper and under part supposing the Air above them to be much lighter then are, and they themselves to be yet lighter then that v to them, many of them seeming to be the same substan webs that fly in the Air after a Fog.

Now that such a constitution of the Air and Clouds, may be sufficient to perform this effect, may be confirmed.

Make as strong a Solution of Salt as you are able, t of some depth half full with it, fill the other half with poysse a little Glass-bubble, so as that it may sink pret Water, which take and put into the aforesaid Glass, it to sink till it comes towards the middle, where it without moving either upwards or downwards. An experiment, of poising such a bubble in water, whose upp and consequently lighter, then the under, which is col the manner of which follows in this next Quarry, which

6. Whether the rarification and condensation of W after the same manner, as those effects are produc'd in for I once pois'd a seal'd up Glass-bubble so exactly, t an addition would make it sink, and as small a detract which suffering to rest in that Vessel of Water for some found it about noon to be at the bottom of the Water, in the morning, at the top: Imagining this to proceed faction of the Water, caus'd by the heat, I made tryal true; for I was able at any time, either to depress, or and cold; for if I let the Pipe stand for some time could easily raise the Bubble from the bottom, whiche fore detruded it, by putting the same Pipe into warm way I have been able, for a very considerable time, to poys'd in the Water, as that it should remain in the mi sink, nor swim: For gently heating the upper part of Candle, Coal, or hot Iron, till I perceiv'd the Bubble then forbearing, I have observ'd it to descend to such and there to remain suspended for some hours, till th were quite vanish'd, when it would again ascend to This I have also often observ'd naturally performed b Air, which being able to rarifie the upper parts of t then the lower, by reason of its immediate contact, th